ABSTRACT

A transparent proxy server is implemented by directing particular packets from clients to a proxy server so that the proxy server can handle communications between the client and an origin server. The client is not configured with the IP address of the proxy server. The client sends packets to set up a connection with the origin server, and requests the origin server to perform a service. The packets from the client are transparently redirected to the proxy server by a router. When redirecting packets to the proxy server, the origin server address is stored in the record route options field of the packet, and the proxy server address is stored in the destination address. Thus, when the proxy server receives the packet, it can determine from the record route options field the address of the origin server the packet is intended for. The proxy server sends a request to the origin server to set up a connection between the origin server and itself. If the origin server sends an acknowledgment packet to the proxy server in response to the connection setup request, the proxy server in turn sends an acknowledgment packet to the client. The proxy server creates the acknowledgment packet to the client to have the origin server address in the source field of the packet, thus making it appear to the client that the packet came from the origin server. The proxy server creates packets having the origin server IP address in the source field, thus making it appear to the client as if the packet were generated by the origin server. When the client forwards a request packet to the origin server, and the packet is redirected by the router to the proxy server, the proxy server determines whether information requested in the packet is stored locally in the proxy server cache. If the information is in the cache, the information is retrieved and forwarded to the client in a packet having the origin server as the source. If the information is not in the cache, the proxy server retrieves the information from the origin server.